CLAIMS

We claim:

1. A compound of formula I:

$$\begin{array}{c} & & \\$$

I

or a pharmaceutically acceptable derivative thereof, wherein:

A-B is N-O or O-N;

 R^1 is selected from halogen, NO_2 , T_yR , or TCN; each T is independently selected from an optionally substituted C_1 - C_6 alkylidene chain, wherein:

one methylene unit of T is optionally replaced by O, NR, NRC(O), C(O)NR, NRC(O)NR, C(O), C(O)CH₂C(O), C(O)C(O), OC(O), NRSO₂, S, SO, SO₂NR, or SO_2 ;

y is zero or one;

each R is independently selected from hydrogen or an optionally substituted $C_1\text{-}C_6$ aliphatic group, or:

two R on the same nitrogen are taken together with the nitrogen to form a 3-7 membered saturated, partially unsaturated, or fully unsaturated ring having 1-2 heteroatoms, in addition to the nitrogen bound thereto, independently selected from nitrogen, oxygen, or sulfur;

 R^2 is R or Ar^1 ;

G is selected from X_mR or X_mAr^1 ;

each m is independently selected from zero or one; X is selected from O, S, SO, SO₂, NH, C(O), C(O)NH,

NHC(O), NHC(O)NH, SO₂NH, NHSO₂, or NHSO₂NH;

- each Ar¹ is independently selected from an optionally substituted ring selected from a 5-7 membered saturated, partially unsaturated, or fully unsaturated monocyclic ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur, or an 8-10 membered saturated, partially unsaturated, or fully unsaturated bicyclic ring having 0-4 heteroatoms independently selected from nitrogen, oxygen, or sulfur;
- R^3 is selected from ZQ_nR^5 or $ZQ_nR^7,$ wherein ZQ_nR^7 is not hydrogen;
- Q is an optionally substituted C_1 - C_6 alkylidene chain wherein:
 - one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, NRC(O), C(O)NR, C(O), S, SO, SO₂, or SO₂NR; provided that said optionally replaced methylene unit of Q is a methylene unit non-adjacent to R⁷;
- each n is independently selected from zero or one;
- Z is selected from a valence bond, O, S, SO, SO₂, NH, C(O), C(O)NH, NHC(O), SO₂NH, or NHSO₂;
- - two R⁴ on adjacent positions of the phenyl ring are taken together to form a saturated, partially unsaturated, or fully unsaturated 5-7 membered ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur;

 R^5 is Ar^1 , wherein R^5 is optionally substituted with up to three R^6 ;

each R^6 is independently selected from R, halogen, NO_2 , CN, OR, SR, $N(R)_2$, NRC(O)R, $NRC(O)N(R)_2$, $NRCO_2R$, C(O)R, CO_2R , $C(O)N(R)_2$, $OC(O)N(R)_2$, SOR, SO_2R , $SO_2N(R)_2$, $NRSO_2R$, $NRSO_2N(R)_2$, C(O)C(O)R, or $C(O)CH_2C(O)R$, or:

two R⁶ on adjacent positions of R⁵ are taken together to form a saturated, partially unsaturated, or fully unsaturated 5-7 membered ring having 0-3 heteroatoms independently selected from nitrogen, oxygen, or sulfur; and

 R^7 is selected from R, halogen, NO_2 , CN, OR, SR, $N(R)_2$, NRC(O)R, $NRC(O)N(R)_2$, $NRCO_2R$, C(O)R, CO_2R , OC(O)R, $C(O)N(R)_2$, $OC(O)N(R)_2$, SOR, SO_2R , $SO_2N(R)_2$, $NRSO_2R$, $NRSO_2N(R)_2$, C(O)C(O)R, or $C(O)CH_2C(O)R$; provided that:

- (a) when R^3 is ZQR^7 , R^1 is other than hydrogen , and
- (b) when R^1 is hydrogen, R^5 is other than phenyl.
- 2. The compound according to claim 1, wherein said compound has the formula Ia or Ib:

or a pharmaceutically acceptable derivative thereof.

3. The compound according to claim 2, wherein said compound has the formula II:

II

or a pharmaceutically acceptable derivative thereof.

4. The compound according to claim 3 wherein: $\label{eq:R3} R^3 \text{ is } ZQ_nR^5;$

Z is a valence bond, O, NH, or NHC(O); and R⁵ is a 5-6 membered saturated or aryl ring having 0-2 heteroatoms independently selected from nitrogen, oxygen, or sulfur, wherein said ring is optionally substituted with up to two R⁶ groups.

- 5. The compound according to claim 3, wherein: $R^3 \text{ is } ZQ_nR^7;$ Z is a valence bond, O, NH, or NHC(O); and $R^7 \text{ is selected from OR, N(R)}_2, \text{ OC(O)R, CO}_2R, \text{ C(O)N(R)}_2, \text{ NRC(O)OR, or NRC(O)R.}$
- 6. The compound according to claim 2, wherein said compound has the formula IIIa:

IIIa

or a pharmaceutically acceptable derivative thereof.

- 7. The compound according to claim 6, wherein: n is one;
- Q is a C_{1-6} alkylidene chain wherein one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, S, or C(O); and
- R^5 is a 5-6 membered saturated or aryl ring having 0-2 heteroatoms independently selected from nitrogen, oxygen, or sulfur, wherein said ring is optionally substituted with up to two R^6 groups.
- 8. The compound according to claim 2, wherein said compound has the formula IIIb:

$$\begin{array}{c} & & & \\ & & \\ & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

IIIb .

or a pharmaceutically acceptable derivative thereof.

- 9. The compound according to claim 8, wherein: n is one;
- Q is a C_{1-6} alkylidene chain wherein one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, S, or C(O); and
- R^7 is selected from OR, $N(R)_2$, OC(O)R, CO_2R , C(O)N(R)₂, NRC(O)OR, or NRC(O)R.
- 10. The compound according to claim 2, wherein said compound has the formula IVa:

$$\begin{array}{c} & & & \\ & & \\ & & & \\ & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

IVa

or a pharmaceutically acceptable derivative thereof.

- 11. The compound according to claim 10, wherein: n is one;
- Q is a C_{1-6} alkylidene chain wherein one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, S, or C(O); and R^5 is a 5-6 membered saturated or aryl ring having 0-2 heteroatoms independently selected from nitrogen, oxygen, or sulfur, wherein said ring is optionally substituted with up to two R^6 groups.
- 12. The compound according to claim 1, wherein said compound has the formula IVb:

IVb

or a pharmaceutically acceptable derivative thereof.

13. The compound according to claim 12, wherein:
n is one;

- Q is a C_{1-6} alkylidene chain wherein one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, S, or C(O); and R^7 is selected from OR, $N(R)_2$, OC(O)R, CO_2R , C(O)N(R)₂, NRC(O)OR, or NRC(O)R.
- 14. The compound according to claim 2, wherein said compound has the formula Va:

$$\begin{array}{c} & & & \\$$

Va

or a pharmaceutically acceptable derivative thereof.

- 15. The compound according to claim 14, wherein: n is one;
- Q is a C_{1-6} alkylidene chain wherein one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, S, or C(O); and
 - R^5 is a 5-6 membered saturated or aryl ring having 0-2 heteroatoms independently selected from nitrogen, oxygen, or sulfur, wherein said ring is optionally substituted with up to two R^6 groups.
 - 16. The compound according to claim 2, wherein said compound has the formula **Vb**:

Vb

or a pharmaceutically acceptable derivative thereof.

17. The compound according to claim 16, wherein: n is one;

Q is a C₁₋₆ alkylidene chain wherein one or two non-adjacent methylene units of Q are optionally and independently replaced by O, NR, S, or C(O); and R⁷ is selected from OR, N(R)₂, OC(O)R, CO₂R, C(O)N(R)₂, NRC(O)OR, or NRC(O)R.

18. The compound according to any of claims 4, 5, 7, 9, 11, 13, 15, or 17, wherein: G is X_mR or X_mAr^1 ; each m is independently zero or one; each X is independently selected from O, S, or NH;

each x is independently selected from O, S, or NH;

R is C_{1-4} aliphatic; and

Ar¹ is an optionally substituted 5-6 membered saturated or aryl ring having 0-2 heteroaroms independently selected from nitrogen, oxygen, or sulfur.

19. The compound according to claim 1, wherein said compound is selected from the following Table 1 compounds:

II

Table 1. Compounds of Formula II

	Compoc	mas of Formara 11	
No.	R ¹	G ZZ	R ³
П-1	СН3	NO CH ₃	3 OH
П-2	СН₃	CH ₃	NH ₂
П-3	СН₃	CH ₃	у ОН
П-4	СН3	NO CH ₃	NH ₂

Nó.	\mathbb{R}^1	G Zz	R ⁴ R ³
П-5	СН₃	CH ₃	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
П-6	CH₂CN	NO CH ₃	3
П-7	соон	CH ₃	Z CI
П-8	Н	CH ₃	3, N
П-9	CH₂CH₃	HN ZZ	CF ₃ NH ₂
П-10	C(O)NH₂	CH ₂ CH ₃	

20. The compound according to claim 1, wherein said compound is selected from the following Table 2 compounds:

$$\begin{array}{c} & & & \\ & & \\ & & & \\ & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$$

IIIa

Table 2. Compounds of Formula IIIa

No.	R ¹	G N O R ²	R ⁴ O Q _n , R ⁵
IIIa-l	н	CH ₃	2 C
IIIa-2	H	N CH ₃	3 \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
IIIa-3	Н	NO CH ₃	3 CON
IIIa-4	Н	NO CH ₃	3 O N
Ш а -5	Н	NO CH ₃	Z O N OH

No.	\mathbb{R}^1	G N O R ²	25 Q _n R ₅
IIIa-6	Н	NO CH ₃	HO NO
IIIa-7	Н	NO CH ₃	25 OON OH
IIIa-8	Н	NO CH ₃	35 OH
Ша -9	н	NO CH ₃	₹ O OH
IIIa -10	н	NO CH ₃	3, CO N N HO
IIIa- 11	H	NO CH ₃	35 HO
Ша-12	Н	NO CH ₃	3, OON NON OH

No.	R ¹	G ZZ	25, Q _n , R ₅
IIIa-13	Н	CH ₃	25 O O O O O O O
IIIa-14	Н	N CH ₃	35 O N N OH
Ша -15	н	NO CH ₃	3, COON
Ша -16	Н	NO CH ₃	3, O O N O
IIIa-17	н	NO CH ₃	3 COON
IIIa-18	Н	NO CH ₃	35 NH
IIIa-19	Н	NO CH ₃	i, NOH

No.	R ¹	G ZZ	R ⁴ O On R ⁵
IIIa-20	н	NO CH ₃	i, N
IIIa-21	Н	NO CH ₃	25 HO N
IIIa-22	н	NO CH ₃	N N N N N N N N N N N N N N N N N N N
Ша-23	н	N CH ₃	Zy O CH ₃
IIIa-24	Н	NO CH ₃	
IIIa-25	Н	NO CH ₃	

No.	R ¹	G ZZ	27 O Q _n R ₅
IIIa-26	н	NO CH ₃	3 CO
Ша- 27	H	N CH ₃	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z
IIIa-28	Н	NO CH ₃	* O O O Y Y
IIIa-29	н	NO CH ₃	Z NH
Ша-30	н	NO CH ₃	3 Conjox
IIIa-31	н	NO CH ₃	3, O NH
IIIa-32	СН3	CH ₃	***

No.	\mathbb{R}^1	G ZZ	25 Q Q _n . R ⁵
IIIa-33	CN	N CH ₃	3
IIIa-34	Н	H N CH ₃	Z, NH
IIIa -35	Н	H N CH ₃	3, NH
IIIa-36	СН₃	OCH ₃	3000
Ша-37	СН₃	NO CH ₃	**
Ша-38	СН₃	N CH ₃	
Ша-39	СН₃	NH Z, CH ₃	

No.	R^1	G N O R ²	23, Q _n , R ₅
IIIa-40	25	HN CH ₃	Z _y NH
IIIa -41	ОН	N CH ₃	3, NH
IIIa-42	СН₃	N CH ₃	Z, NH
Ша- 43	Н	N CH ₃	35 NH
Ⅲa -44	н	N CH ₃	Z NH
IIIa -45	Н	NO CH ₃	ž, NH
Ша -46	Н	HN Z	Z NH

21. The compound according to claim 1, wherein said compound is selected from the following Table 3 compounds:

$$R^4$$
 Q_{n}
 R^7
 R^2
 R^1

IIIb

Table 3. Compounds of Formula IIIb

No.	R¹	G ZZ R	3, Q _n , R ⁷
Шь-1	СН₃	NO CH ₃	35 ONN
Шь-2	СН3	CH ₃	25 OH
Шь-3	CH₂CH₃	NO CH ₃	35 N
Шь-4	СН₂ОН	NO CH ₃	3 OON NOH

No.	R ¹	G ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	27 O O O O O O O O O O O O O O O O O O O
ШЬ-5	СН3	CH ₃	3, N OCH3
ПІЬ -6	CH₂CN	NO CH ₃	ў — Н N — ОН
Шь-7	СН₂ОН	NO CH ₃	3000
Шь-8	СН₃	NO CH ₃	3, NH₂
Шь-9	СН3	NO CH ₃	35 O O O O O
Шь-10	СН₂ОН	NO CH ₃	3 O O O O O O O O O O O O O O O O O O O
ШЬ-11	СН3	CH ₃	3, OCH ₃

No.	\mathbb{R}^1	G N O R ²	R ⁴ O Q _n R ⁷
IIIb-12	CH₂CH₃	NO CH ₃	у О О Н Н О Н
IIIb-13	СН3	NO CH ₃	HO N H
ШЬ-14	СН₃	CH ₃	25 O
Шь-15	СН3	N CH ₃	HO N
Шь-16	СН₃	NO CH ₃	CH ₃ O NH
Шь-17	СН₃	NO CH ₃	HO NH
Шь-18	СН₂ОН	ON 245 NO CH3	HO H

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No.	R ¹	G N O H ²	R ⁴ O Q _n R ⁷
Шь-19	СН₂ОН	NO CH ₃	Z O NH
ШЬ-2 0	СН₂ОН	CH ₃	3 N N N N N N N N N N N N N N N N N N N
IIIb-21	СН₂ОН	HZ CH ₃	₹,
Шь-22	СН₃	CH ₃	Z N N H
.Шь-23	CO₂CH₃	NO CH ₃	OCH ₃
Шь-24	CO₂H	NO CH ₃	OCH ₃
Шь-25	СН₂ОН	N CH ₃	OCH ₃

No.	R ¹	G N N H ²	25 O Qn-R7
Шь-26	C(O)NH₂	NO CH ₃	OCH ₃
ШЬ-27	СИ	NO CH ₃	OCH ₃
Шь-28	СН3	Z CH ₃	3 ОН
Шь-29	CH₂OCH₂CH₂CH₃	NO CH ₃	OCH ₃ OCH ₃

22. The compound according to claim 1, wherein said compound is selected from the following Table 4 compounds:

IVa

Table 4. Compounds of Formula IVa

No.	R¹	G ZZ R2	R ⁴ N Q _n R ⁵ H
IVa-1	Н	NO CH ₃	35 N N N N
IVa-2	H	N CH ₃	Z N O
IVa-3	н	H N CH ₃	Z, N, N
IVa-4	H	OCH ₃	3 N N
IVa-5	СН3	NH CH ₃	N N N
IVa-6	CH ₃	HN Zz,	N N N OH
IVa-7	СН3	N CH ₃	35 N N N N HO

No.	R¹	G N O R ²	N Qn R ⁵
IVa-8	СН₃	CH ₃	35 N N N N
IVa-9	н	N CH ₃	N N N N N N N N N N N N N N N N N N N
IVa-10	Н	NO CH ₃	Z H
IVa-11	н .	NO CH ₃	N N N N N N N N N N N N N N N N N N N
IVa-12	H	CH ₃	N H
IVa-13	СН₃	NO CH ₃	OCH ₃

No.	$\mathbf{R^1}$	G ZZ, N R ²	N Q _n R ⁵
IVa-14	СН₃	CH ₃	Z N N N N N N N N N N N N N N N N N N N
IVa-15	СН₃	N CH ₃	OH HON
IVa-16	СН₃	NO CH ₃	HO .

23. The compound according to claim 1, wherein said compound is selected from the following Table 5 compounds:

IV

Table 5. Compounds of Formula IVb

No.	\mathbf{R}^{1}	G N O H ²	R ⁴ N Q _n R ⁷ H
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No.	R ¹	G Zz Zz Zz R ²	N Qn R ⁷
IVb-1	СН₃	NO CH ₃	35 N N N
IVb-2	CH₂CH₃	NO CH ₃	₹ N N N OH
IVb-3	СН₃	HN CH ₃	N OCH3
IVb-4	СН₂ОН	NO CH ₃	3, N N N OH
IVb-5	ОН	N CH ₃	OH HO NH
IVb -6	СН₂СН₃	N CH ₃	NH ₂
IVb-7	CH₂CN	N CH ₃	HO N

No.	R ¹	G ZZ	R ⁴ N Q _n R ⁷ H
IVb-8	~ ~ ~	N CH ₃	OCH3 NH
IVb-9	NH ₂	NO CH ₃	HO NH H

24. The compound according to claim 1, wherein said compound is selected from the following Table 6 compounds:

٧a

Table 6. Compounds of Formula Va

No.	R ¹	G N O R ²	R ⁴ N H Q _n R ⁵
Va-1	н	NO CH ₃	25 N H

No.	\mathbb{R}^1	G N O R ²	R ⁴ N N Q n R ⁵
Va-2	Н	CH ₃	NH O
Va-3	н	NO CH ₃	Z N N N N N N N N N N N N N N N N N N N
Va-4	СН₃	NO CH ₃	Z N N
Va-5	н	NO CH ₃	N N N N N N N N N N N N N N N N N N N
Va -6	Н	N CH ₃	NH NH
Va- 7	CH₂CH₃	NO CH ₃	35 N N N N OH
Va-8	CH₂CN	NO CH ₃	35 N N N N HO

No.	R ¹	G N O R ²	R ⁴ N Q _n R ⁵
Va -9	СН₂ОН	CH ₃	N HO N
Va-10	Н	N CH ₃	Z, N N N N N OH
Va-11	н	NO CH ₃	NH NH
Va-12	н	N CH ₃	N H
Va-13	СН₃	NO CH ₃	N N N N N N N N N N N N N N N N N N N
Va-14	ОН	N CH ₃	OCH3 N H N N N N N N N N N N N N N N N N N N

No.	R ¹	G ZZ N R ²	R^4 Q_n R^5
Va -15	н	N CH ₃	N HO HO
Va -16	NH ₂	CH ₃	OH OH HO
Va-17	. н	N CH ₃	NH HO .

25. The compound according to claim 1, wherein said compound is selected from the following Table 7 compounds:

Vì

Table 7. Compounds of Formula Vb

No.	R¹	G N O R ²	R ⁴ N Q _n R ⁷
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No.	R ¹	N R ²	R ⁴ O N O R O R O R O R O R O R O R O R O R
Vb-1	СН3	NO CH ₃	3, N N N N N N N N N N N N N N N N N N N
Vb-2	CH₂CH₃	NO CH ₃	N N N OH
Vb-3	. СН₃	NO CH ₃	N O OCH3
Vb-4	СН₂ОН	NO CH ₃	N OH
Vb -5	ОН	NO CH ₃	OH OHO NH
Vb- 6	CH₂CH₃	N CH ₃	NH ₂
Vb-7	CH₂CN ⁻	NO CH ₃	N HO N

No.	\mathbf{R}^{1}	G N O R ²	R ⁴ O N R O R O R O
Vb-8	СН₂ОН	N CH ₃	OCH ₃
Vb -9	NH ₂	CH ₃	N HONNH
Vb -10	CH₂CN	Z CH ₃	N HO HO
Vb-11	СН₂ОН	N CH ₃	NH OCH3
Vb -12	NH ₂	CH ₃	NH NH
Vb-13	СН₂ОН	NO CH ₃	NH ₂
Vb-14	СН₃	N CH ₃	

No.	R ¹	G ZZ N N N R ²	P ⁴ N Q _n R ⁷
Vb -15	СН₂СН₃	NO CH ₃	N OH
Vb -16	СН₃	NO CH ₃	N H OCH3
Vb -17	СН₂ОН	NO CH ₃	N H N OH
Vb -18	ОСН₃	NO CH ₃	Z N
Vb -19	СН₂ОСН₃	NO CH ₃	NH ₂
Vb-20	СН3	NO CH ₃	CH ₃
Vb-21	CH₂CH₃	CH ₃	OCH ₃

No.	R ¹	G N O R ²	R ⁴ N Q _n R ⁷
Vb-22	СН₂ОН	NO CH ₃	No H

- 26. A composition comprising a compound according to claim 1, in an amount to detectably inhibit Src or Lck protein kinase activity, and a pharmaceutically acceptable carrier, adjuvant, or vehicle.
- 27. The composition according to claim 26, additionally comprising an additional therapeutic agent selected from an a chemotherapeutic or anti-proliferative agent, a treatment for Alzheimer's Disease, a treatment for Parkinson's Disease, an agent for treating Multiple Sclerosis (MS), a treatment for asthma, an anti-inflammatory agent, an immunomodulatory or immunosuppressive agent, a neurotrophic factor, an agent for treating cardiovascular disease, an agent for treating liver disease, an agent for treating a blood disorder, or an agent for treating an immunodeficiency disorder.
- 28. A method of inhibiting Src or Lck kinase activity in a biological sample, comprising the step of contacting said biological sample with:
 - a) a composition according to claim 26; or
 - b) a compound according to claim 1.
- 29. A method of treating or lessening the severity of a Src- or Lck-mediated disease or condition in a

patient, comprising the step of administering to said patient:

- a) a composition according to claim 26; or
- b) a compound according to claim 1.
- 30. The method according to claim 29, wherein said Src-mediated disease is selected from hypercalcemia, restenosis, osteoporosis, osteoarthritis, symptomatic treatment of bone metastasis, rheumatoid arthritis, inflammatory bowel disease, multiple sclerosis, psoriasis, lupus, graft vs. host disease, T-cell mediated hypersensitivity disease, Hashimoto's thyroiditis, Guillain-Barre syndrome, chronic obtructive pulmonary disorder, contact dermatitis, cancer, Paget's disease, asthma, ischemic or reperfusion injury, allergic disease, atopic dermatitis, or allergic rhinitis.
- 31. The method according to claim 29, wherein said Lck-mediated disease is selected from an autoimmune disease, allergies, rheumatoid arthritis, or leukemia.
- 32. The method according to claim 29, comprising the additional step of administering to said patient an additional therapeutic agent selected from a chemotherapeutic or anti-proliferative agent, a treatment for Alzheimer's Disease, a treatment for Parkinson's Disease, an agent for treating Multiple Sclerosis (MS), a treatment for asthma, an anti-inflammatory agent, an immunomodulatory or immunosuppressive agent, a neurotrophic factor, an agent for treating cardiovascular disease, an agent for treating liver disease, an agent for treating a blood disorder, or an agent for treating an immunodeficiency disorder, wherein:

said additional therapeutic agent is appropriate for the disease being treated; and said additional therapeutic agent is administered together with said composition as a single dosage form or separately from said composition as part of a multiple dosage form.

- 33. A composition for coating an implantable device comprising a compound according to claim 1 and a carrier suitable for coating said implantable device.
- 34. An implantable device coated with a composition according to claim 33.